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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,294	07/13/2000	Stuart J. Knowles	A-68944/ESW	4777
40461	7590	06/15/2005	EXAMINER	
EDWARD S. WRIGHT 1100 ALMA STREET, SUITE 207 MENLO PARK, CA 94025			TUGBANG, ANTHONY D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

<b>Office Action Summary</b>	<b>Application No.</b> 09/615,294	<b>Applicant(s)</b> KNOWLES ET AL.	
	<b>Examiner</b> A. Dexter Tugbang	<b>Art Unit</b> 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-8 and 10-18 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/18/05</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. The applicant(s) amendment filed on 3/17/05 has been fully considered and made of record.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. The rejections are maintained and hereby repeated below merely for the applicant(s) convenience.

***Claim Rejections - 35 USC § 102 and 103***

3. Claims 4-8 and 10-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Macy 5,522,249.

Macy discloses a method of manufacturing a tuning fork comprising: forming a pair of elongated tines (Drive No. 1 and Drive No. 2 in Figs. 4, 7 and 8), each having front and rear surfaces and are disposed symmetrically about an axis; using balancing masses or mass elements (electrodes 106, 107, 121, 122, 84, 71, 83 in Fig. 9) on the front surface of one tine and the rear surface of the other tine to reduce quadrature displacement in the tines and maintain a balance in mass between the tines. Macy discloses that quadrature displacement is reduced and drive mode frequency is adjusted by removing portions of the balancing masses, or mass elements, by laser trimming (see col. 7, lines 34+). Prior to laser trimming, the balancing masses, or mass elements, can be read as being added to the tines. After laser trimming, the balancing masses, or mass elements, can be read as being adjusted, all of which is to reduce quadrature displacement, adjust drive mode frequency, and maintain a balance in mass between the tines.

It is noted that the discussion of laser trimming by Macy (at col. 7, lines 34+) substantially removes equal amounts of balancing mass, or mass element, material of the electrodes 106, 107, 121, 122, 84, 71, 83. Since the balancing masses, or mass elements, are on at least three sides, or three surfaces, of the tines (as shown in Fig. 9), removal of this mass (electrode) material would be inherently inclusive of the “opposite sides” of the tines, the “same sides” of the tines, or from the “front surface of one tine and the rear surface of the other tine”.

If applicant(s) do not believe that removing or adjusting the balancing masses, or mass elements, would inherently be inclusive of the “opposite sides” of the tines, the “same sides” of the tines, or from the “front surface of one tine and the rear surface of the other tine”, then it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Macy by removing or adjusting the balancing masses, or mass elements, in the above manner, to achieve symmetry and balance in the drive tines of the tuning fork. Macy attempts to solve his own very problem of symmetry and balance with balancing of the masses, or mass elements (electrodes) as discussed at col. 4, lines 46+.

#### ***Response to Arguments***

4. Applicant's arguments filed in the response on 3/17/05 have been fully considered, but have not been deemed to be found as persuasive.

In regards to the merits of Macy, the applicant(s) assert that Macy does not teach any “balancing masses” (as required in each of Claims 4, 7, 11, 14 and 16), or “mass elements” (as required in each of Claims 5 and 6).

The examiner most respectfully disagrees.

Art Unit: 3729

The examiner's position is that the pickup electrodes of Macy are balancing masses or mass elements. While it is true that their function is to provide electrical conductivity, the electrodes are metal and are a mass that is significant to the invention of Macy. Macy recognizes this by the very location of placing the electrodes, i.e. balancing masses or mass elements, on the tines (as shown in the arrangement of Figure 9). And Macy even utilizes these electrodes to balance the tines through symmetry (col. 4, lines 46+).

The very fact that Macy places the electrodes on the tines is equivalent to using, applying, forming or adding balancing masses, or mass elements, on the tines, to eliminate and reduce quadrature error. The elimination of quadrature error by Macy is accomplished by trimming the electrodes, which is equivalent to removing material or portions of material from the balancing masses or mass elements. Trimming of the electrodes is a mechanical balancing technique, not just an electrical balancing technique. So the examiner's position is that Macy is concerned with reducing quadrature error the very same way that applicant(s) are, as claimed.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that balancing masses must be 10,000 num thick or the location of the balancing masses relative to the ends of the tines) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to Claim 7, the examiner further clarifies that Macy has elongated tines having free ends (cross-hatched region of element 42 in Fig. 9) of increased lateral dimension with laterally offset balancing masses (pickup electrodes 107, 122, 106, 121) and that it is the

Art Unit: 3729

balancing masses themselves (pickup electrodes) that increases the lateral dimension of the free ends of the tines.

***Allowable Subject Matter***

5. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

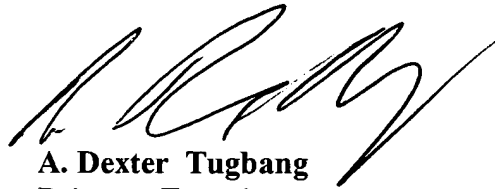
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

Art Unit: 3729

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**A. Dexter Tugbang**  
**Primary Examiner**  
**Art Unit 3729**

June 13, 2005